

ABSTRACT OF THE DISCLOSURE

Semi-integrated external cavity diode laser (ECDL) designs including integrated structures comprising a gain section, phase control section, and optional modulator section. Each integrated structure includes a waveguide that passes through each of the sections. A mirror is defined in the structure to define one end of a laser cavity. A reflective element is disposed generally opposite a rear facet of the gain section, forming an external cavity therebetween. A tunable filter is disposed in the external cavity to effectuate tuning of the laser. During operation, a modulated drive signal is provided to the phase control section. This modulates an optical path length of the laser cavity, which produces an intensity (amplitude) modulation in the laser output. A detector is employed to produce a feedback signal indicative of the intensity modulation that is used for tuning the laser in accordance with a wavelength locking servo loop. Upon passing through the modulator section, an optical signal is modulated with data.